

Test and Evaluation

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**PROGRAMMING AND REPORTING MISSILE
AND TARGET EXPENDITURES IN TEST AND
EVALUATION, RCS: HAF-TEP (SA) 7101**

This instruction implements AFR 99-1, *Test and Evaluation Process*, by providing guidance and procedures for programming, requesting, and reporting the expenditure of air-to-air missiles and aerial targets. It also establishes responsibility for programming and allocating air-to-air missiles and targets for those organizations that conduct Air Force operational test and evaluation (OT&E), development test and evaluation (DT&E), tactics development and evaluation (TD&E), Follow-on Test and Evaluation (FOT&E), weapons system evaluations programs (WSEP), and competitions. It requires annual reports to HQ USAF from each major command (MAJCOM), field operating agency (FOA), and direct reporting unit (DRU) that expends air-to-air missiles and targets. It does not apply to missiles and targets procured specifically for DT&E of a missile or target itself, nor does it apply to developmental or production articles, unless they are controlled or subject to issue by Headquarters Air Force Materiel Command (HQ AFMC).

SUMMARY OF CHANGES

This revision aligns the instruction with AFR 99-1 and replaces the old AFR 55-11. AFI 99-108 deletes all references to TAC, PACAF, AAC, USAFE, and ADC Weapons System Evaluation Programs (WSEPs) and no longer covers air-to-ground missiles, towed targets, or ground targets. The new AFI now directs MAJCOMs to prepare an eight year plan for missile/target expenditures. AFI 99-108 deletes the requirement for specific forms for missile and target expenditure requests and merely lists the required information. AFI 99-108 also changes the required dates for the missile and target expenditure requests.

1. Planning for Air-to-Air Weapon and Target Expenditures. The Air Force has many complex aircraft weapon systems requiring constant exercise to ensure their satisfactory performance in operational units. Furthermore, the Air Force must thoroughly test new and modified systems to ensure they meet user requirements. As these systems become more complex, and as the tactical demands multiply, there is an increase in quantity and cost of the missiles and targets MAJCOMs must expend to evaluate these systems in test and evaluation programs. To improve the means by which the Air Force ensures weapon effectiveness and suitability, each MAJCOM, FOA, and DRU, must establish a program to justify requirements and manage the missiles and targets it expends. For planning purposes, the Air Force considers every missile expenditure a test and evaluation event.

2. Applicable Missiles and Targets. This instruction applies to the following types of missiles and targets:

2.1. All air intercept missiles (AIM-120, 9, 7).

2.2. All aerial targets (BQM-34A, MQM-107, QF-4, QF-106, etc.)

2.3. This instruction only applies to missiles removed from war reserve materiel (WRM) for any test program. MAJCOM/DRUs will not include missiles or targets procured from a contractor, specifically for the DT&E or OT&E of that missile or target, in the missile expenditure requests and reports.

3. Programs Requiring Air-to-Air Weapon and Target Expenditures. The principal test and evaluation programs the Air Force expends its air-to-air missiles, targets, and supporting resource are DT&E, OT&E, TD&E, FOT&E, and WSEP. (Note: In this instruction, the term WSEP includes William Tell weapons meets and the USAF Weapons Instructor Course (WIC) missile firings).

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OPR: AF/TEP (Maj C.R. Davis)

Certified by: AF/TE (Lt Gen Howard W. Leaf, Ret)
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3.1 The Role of WSEP in Test and Evaluation. ACC conducts WSEP to determine the overall effectiveness and suitability of fully integrated weapon systems in realistic operational scenarios while enhancing training. Although training is an important part of WSEP, it is a secondary objective. The primary objective is to gather effectiveness and suitability data on the complete weapons system. To achieve the primary objective, ACC/DOTW and the 475 Weapons Evaluation Group will:

3.1.1. Maintain an accurate missile firing data base to support Air Force decision makers regarding operational capabilities, force structure recommendations, required material modifications, and requirements for new equipment.

3.1.2. Ensure the accuracy of the data base. As a goal, ACC should normally conduct enough missile firings to define the probability of mission success (P_{ms}) of each aircraft/missile combination.

3.1.3. Provide accurate test data for determining the effectiveness and suitability of each weapon system.

3.1.4. Identify weapon system deficiencies, determine causes, and make recommendations for improving operational effectiveness and suitability.

4. MAJCOM/DRU/HQ USAF Responsibilities in the Missile and Target Allocation Process

4.1. MAJCOM/DRU Responsibilities for Planning Expenditure Requirements. Each MAJCOM/DRU will prepare an eight-year plan to identify and justify the types of missiles and targets required for its test evaluation programs. In preparing this plan, consider:

- System Design Requirements
- Test Program Objectives
- Threat—present and future
- Aircraft resources
- Target resources
- Missile resources
- Range facilities
- Past WSEP results
- Results from other test programs

4.1.1. Each MAJCOM/DRU must establish the necessary coordination and review procedures to ensure the projected expenditures are:

- Prioritized according to MAJCOM/DRU requirements.

- Based on current operational tactics, scenarios, and concept of operations.
- Realistic and conform to weapon system evaluation and other test program needs.
- Based on the need to determine weapon system effectiveness. The expenditures should be the absolute minimum required to meet test objectives or weapons system evaluation requirements.
- Based on data collected from previous firing programs and adjusted to fit the planned employment environment.
- Realistic considering the availability of assets.

4.2. MAJCOM/DRU Directions for the Expenditure Request Format. The missiles/target expenditure request must contain the items listed in attachment 1. The MAJCOM/DRU then forwards this request to HQ USAF/TEP for review and validation. The missile/target request should arrive at HQ USAF/TEP no later than 1 April. For all AFMC conducted DT&E programs, the system program office will also include the requested missile/targets in the Test and Evaluation Master Plan (TEMP). For all HQ AFOTEC conducted OT&E programs, HQ AFOTEC/XR will request missiles as described above and will also list required assets in the Test Resource Plan (TRP). (Note: Inclusion of the request in the TEMP or TRP does not automatically provide missile or target support—only direct allocation from HQ USAF/TEP ensures support.)

4.3. MAJCOM/DRU/HQ USAF Responsibilities for Foreign Military Sales (FMS) Programs. Each MAJCOM/DRU will also request the missiles and targets needed for FMS programs conducted within their command. When a foreign military program destroys an aerial target, the 475 Weapons Evaluation group will advise the MAJCOM/DRU responsible for FMS program, who in turn, notifies the FMS case manager in SAF/IA. The SAF/IA FMS case manager then bills the foreign government. Once the foreign government has been billed, and funds are on deposit, the MAJCOM/DRU line manager for aerial targets (as identified in the FMS case) is responsible for getting these funds back to the aerial targets program office. The line manager obtains a fund cite from the targets program office and then transfers money from the FMS account to the Aerial Targets SPO, ASC/YOT. ASC/YOT then uses the reimbursement funds to purchase replacement targets during the next production buy.

4.4. HQ USAF Responsibilities.

4.4.1. **Missile Allocation Responsibilities.** HQ USAF/TEP reviews and validates all test missile expenditure requests. The purpose of this validation is to ensure the missile request is a legitimate test and evaluation requirement. HQ USAF/TEP then forwards the requests to HQ USAF/XOFW. If the request is 100 percent supportable, HQ USAF/XOFW will include the expenditures in the *USAF Tactical Air Missile Program (TAMP)* document. If the expenditure request is not 100 percent supportable (inventory does not support the requirement), then HQ USAF/TEP works with the MAJCOM/DRU to determine priorities and resolve disconnects. For missiles still in the USAF inventory, but no longer listed in the TAMP, HQ USAF/TEP forwards the request to HQ USAF/XOFW who approves release of the missile for expenditure through the system program manager.

4.4.2. **Aerial Target Allocation Responsibilities.** HQ USAF/TEP allocates aerial targets for all test and evaluation programs including WSEP. Unlike missile requests, however, target inventories do not allow 100 percent support of all target requests. Therefore, HQ USAF/TEP tracks historical target usage rates versus requests and allocates targets based on these numbers. HQ USAF/TEP will send final target allocations to all MAJCOM/DRUs by letter. The *USAF Program Aerospace Vehicles and Flying Hours Strategic Missiles, Cruise Missiles, Remotely Piloted Vehicles, and Target Drones (PA Volume III)* also contains the allocations.

4.5. **Other DoD Agency Responsibilities.** Any other DoD agency (e.g., the Army or the Navy) requiring USAF aerial targets on a recurring basis will request the targets as described above. Furthermore, these agencies will provide procurement funds to ASC/YOT two years before the need date to allow the SPO to increase the next planned production buy.

5. MAJCOM/DRU Guidance for the use of Allocated Targets.

5.1. Deviations from target allocations normally require AF/TE coordination; however, AF/TE authorizes the 475 Weapons Evaluation Group to modify the expenditures within the following guidelines:

5.1.1. The 475 Weapons Evaluation Group may interchange subscale aerial target (SSAT) types/models between programs provided they do not exceed total annual SSAT expenditure limits and are still able to meet user profile requirements.

5.1.2. Interchanging SSATs for full-scale aerial targets (FSATs), and visa-versa, requires HQ USAF/TE approval.

5.2. **Special Target Procedures.** Aerial targets are a very limited resource. RTOs, program managers, and the 475 Weapons Evaluation Group will build target survivability maneuvers into every missile shot profile that does not have specific endgame requirements.

5.2.1. Target allocations not used in one fiscal year do not carry over to the next fiscal year. HQ USAF/TEP will provide a new set of allocations for each fiscal year.

5.3. **Unprogrammed Target Requirements.** MAJCOM/DRUs should first try to fill unprogrammed target requirements from existing, current year allocations. When the MAJCOM/DRUs cannot fill unprogrammed requirements they must submit a request to HQ USAF/TEP. HQ USAF/TEP will authorize additional allocations, provided the requirement is valid and inventories permit, once the MAJCOM/DRU has expended all other targets of the type requested.

6. **MAJCOM/DRU Guidance for Missile Expenditures.** Commands will not exceed programmed expenditures without HQ USAF/TEP coordination and HQ USAF/XOFW approval.

6.1. **Special Missile Procedures.** Missile allocations not used in one fiscal year do not carry over to the next fiscal year. The MAJCOM/DRU will have to request new allocations. The one exception to this is when the missile has already been shipped to the test location and it has been configured (with telemetry or other special equipment) for the test.

6.2. **Unprogrammed Missile Expenditure Requirements.** MAJCOM/DRUs should first try to fill unprogrammed expenditure requirements from existing, current year allocations. When unprogrammed requirements cannot be met, MAJCOM/DRUs must submit a request for additional allocations to HQ USAF/TEP. HQ USAF/TEP will validate the request and forward the recommendation to XOFW for approval.

7. **Semi-Annual Missile/Target Expenditure Reports.** All MAJCOM/DRUs must submit a semi-annual report of all missile/target expenditures by 1 May and 1 November. Attachment 2 lists the items required in this report. MAJCOM/DRUs will continue reporting during emergency conditions—precedence normal.

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2 Attachments

1. Missile/Target Expenditure Request Format
2. Semi-Annual Missile/Target Expenditure Report Format

MISSILE/TARGET EXPENDITURE REQUEST FORMAT

Each MAJCOM/DRU will submit an eight-year forecast of missile and target expenditures. MAJCOM/DRUs prioritize missiles and targets requests according to their requirements. The MAJCOM/DRUs will submit the forecast annually, no later than 1 April. No specific format is required, however, each request should contain the following items:

1. DATE.
2. COMMAND.
3. PROGRAM TITLE AND PROGRAM ELEMENT. Include the program title and element code for each planned missile/target expenditure (e.g., PE 27597—F-16 Block 50 OFP Validation). Missile/targets should be grouped by program.
4. MISSILE TYPE. List the type, design number, and series/subseries letter of the missile requested (AIM-7F, AIM-9M, AIM-120B). Also, if more than one type of missile could fill the requirement, specify by listing all usable series /subseries (e.g., AIM-9M/L/P).
5. TARGET TYPE. List the type and model of target requested (e.g., MQM-107E, QF-4, etc.).
6. QUANTITY. Enter the total requirements by missile/target type for each fiscal year. NOTE: For targets list both planned presentations per target and total required kills. Also note if another range other than Eglin/Tyndall (i.e., WSMR) is required.
7. SCORING SYSTEM. List the type of scoring system requested (e.g., scalar or vector).
8. TARGET AUGMENTATION. List the type of target augmentation system requested (e.g., chaff, flares etc.).
9. SPECIAL TARGET MODIFICATION REQUIREMENTS. Provide a general description of any special engineering modifications that either the 475 Weapons Evaluation Group or the user will make to the target (i.e., list any special payloads, instrumentation systems, or other hardware modifications required for the target).
10. TELEMETRY TYPE. List the type of missile telemetry package requested. For missiles not requiring telemetry specify why, i.e., warhead shot or for separation purposes only.
11. FISCAL YEAR. Missiles/targets should be grouped by fiscal year for a period covering the next eight consecutive fiscal years. Do not include the current fiscal year.

SEMI-ANNUAL MISSILE/TARGET EXPENDITURE REPORT FORMAT

Each MAJCOM/DRU will submit an semi-annual report of missile and target expenditures no later than 1 May and 1 November. No specific format is required, however, each report should contain the following items:

1. DATE.
2. COMMAND.
3. PROGRAM TITLE AND PROGRAM ELEMENT. Include the program title and element code for each actual missile/target expenditure (e.g., PE 27597—F-16 Block 50 OFF Validation). Missile/targets should be grouped by program.
4. MISSILE TYPE. List the type, design number, and series/subseries letter of the missile expended (e.g., AIM-7F, AIM-9M, AIM-120B).
5. TARGET TYPE. List the type and model of target expended (e.g., MQM-107E, QF-4, QF-106, etc.).
6. FY. Enter the fiscal year that the report covers.
7. EXPENDED THIS FY. Enter the cumulative number of missiles/targets, by type, expended during the FY.
8. ALLOCATION FOR FY. Enter the total number of missiles/target allocated for this fiscal year.
9. ALLOCATION EXPENDED. Mathematically divide the category "EXPENDED FOR FY" by the category "ALLOCATED FOR FY."
10. FIRINGS PER LAUNCH. Enter the number of missile firings per target per launch. (Mathematically divide the total number of missiles fired at that type of target by the total number of launches of that type of target.)
11. FIRINGS PER LOSS. Enter the number of missiles fired at a particular type target before it was lost or destroyed.